Historic, Archive Document

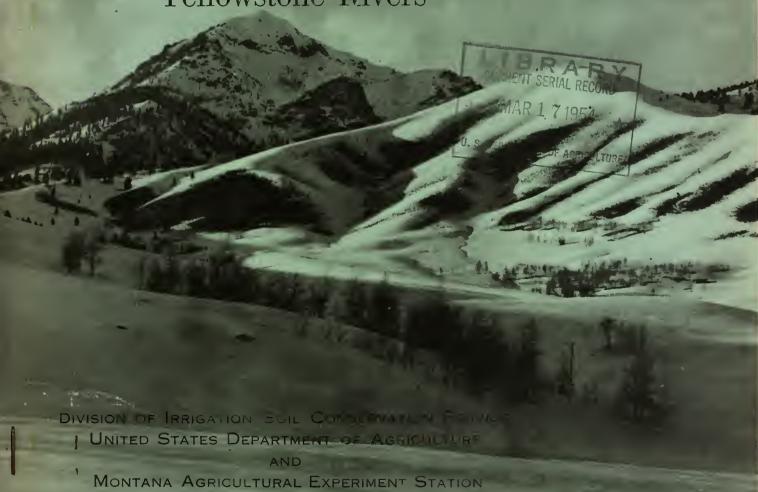
Do not assume content reflects current scientific knowledge, policies, or practices.



Reserve 1.96 R31Fsmo

Federal -State Cooperative
Snow Surveys and Water Supply Forecasts
for

Montana and Northern Wyoming
Upper Missouri,
Upper Columbia and
Yellowstone Rivers



In cooperation with the U. S.Forest Service, U. S. Geological Survey, National Park Service, U.S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

-AS OF

Mar. 1, 1954

UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in that bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge River Forecast Center U. S. Weather Burcau 712 Federal Office Building Kansas City 6, Missouri

For current information on local river and flood conditions, reference should be made to the appropriate River District Office, listed below:

Meteorologist in Charge.......Missouri River and
Weather Bureau Office tributaries above
Box 1705 Fort Peck Dam; Milk
Helena, Mont. River

Meteorologist in Charge......Yellowstone River Weather Bureau Airport Station and tributaries. Box 1338
Billings, Mont.

Meteorologist in Charge.............Columbia River and Weather Bureau Airport Station tributaries above R.F.D. #1 and including Grand Spokane, Washington Coulee Dam.

State of Montana

FEDERAL - STATE COOPERATIVE SNOW SURVEYS AND WATER SUPPLY FORECASTS

FOR
MONTANA AND NORTHERN WYOMING
(Upper Missouri and Upper Columbia River Basins)

Report issued by:

Truman C. Anderson State Conservationist of Montana M. M. Kelso Director, Montana Agricultural Experiment Station

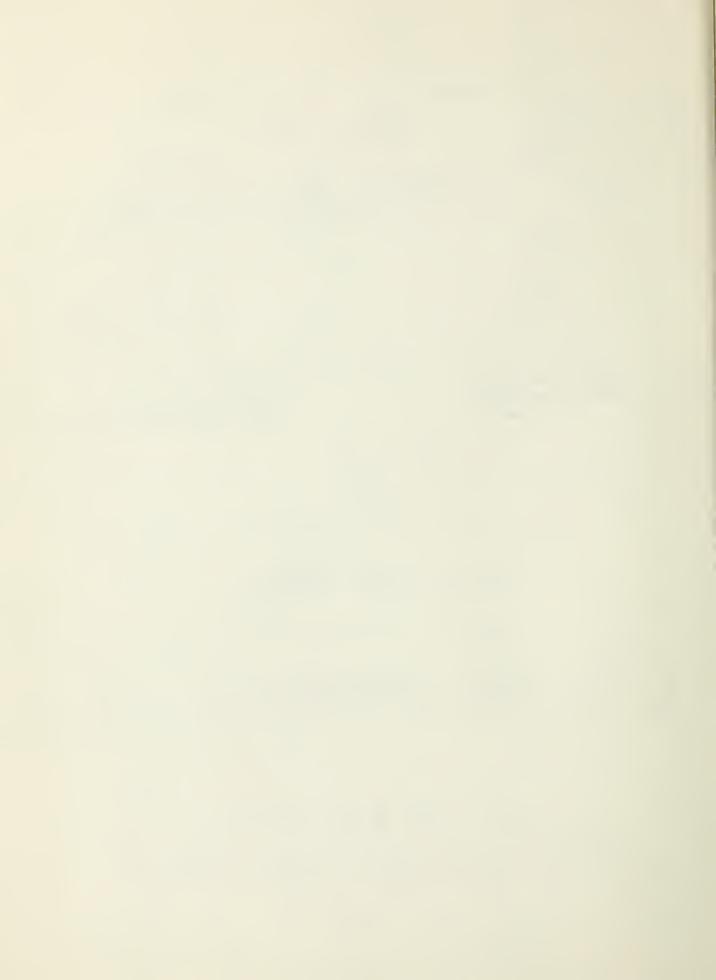
Report Prepared by:

A. R. Codd
Hydraulic Engineer
Soil Conservation Service

and

O. W. Monson
Irrigation Engineer
Montana Agricultural Experiment Station

Soil Conservation Service
U. S. Department of Agriculture
and
Montana Agricultural Experiment Station
Bozeman, Montana



WATER SUPPLY OUTLOOK FOR SEASON 1954 AS OF MARCH 1. 1954

JEFFERSON RIVER:

The snow-pack over the Beaverhead and Jefferson River as a whole is below average and preliminary water forecasts would at this time indicate that the tributaries will flow approximately 20% below the average.

MADISON RIVER:

The snow-pack over the Madison River is slightly above average with an outlook of water supply being approximately 100% average.

GALLATIN RIVER:

Although some of the snow measurements on the Gallatin showed higher than normal preliminary forecasts of water supply indicate approximately 92-80% average.

MISSOURI RIVER MAIN STEM:

Some of the tributaries to the Main Stem of the Missouri River, such as the Teton, Sun and Marias River have a snow-pack well above average. However, the deficiency of water above Toston will affect the flow into Fort Peck, which appears at this time to be approximately 94% average. The snow cover on the Sun River is 72% greater than last year and 47% greater than 1952, and 148% average for 7 to 20 years. It is anticipated that the flow of the Sun River at Vaughn will be approximately 578,000 acre feet, or 128% average. This figure is the observed flow plus or minus changes of the several reservoirs above Vaughn. With Gibbons Reservoir now at 73% capacity, it would appear to be a little high in comparison with the anticipated runoff from this basin.

YELLOWSTONE RIVER:

The snow-pack over the Upper Yellowstone River Basin in the Park is approximately 10% above average and the river at Corwin Springs will more than likely flow approximately 2 million acre feet during April-September.



COLUMBIA RIVER:

The snow-pack over the Flathead Basin is better than last year by 67%, and 35% better than 1952 - 124% average. It is anticipated that the water supply for Hungry Horse Reservoir will be approximately 115% average on 2,591,000 acre feet from April through September, provided normal. A normal accumulation of snow occurs during March. With this same assumption, the Flathead at Columbia Falls should flow about 115% average, also. On the Clark Fork River, above Missoula, the snow-pack is slightly above average and the flow of this stream will probably only reach 103% average. Considerable snow exists on the Clark Fork River below Missoula and when combined with the Flathead, should produce about 129% average flow at Cabinet Gorge during the period April through September.

* * * *



COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

Summary of Snow Survey Data by Tributary Watersheds as of March 1, 1954

MDTDIM LDIT DAGTIO	No. of	No.			r Equivalent
TRIBUTARY BASINS	Courses	Years			ercent of AVERAGE%
	Averaged	Record	1900%	1902/6	AVBRAUD/0
W-Daguer		TN TN 160	NATON A REA		
MISSOUR	RIVER BAS	IN IN MC	AWATING		
JEFFERSON	26	3-18	76	68	70
Rock-Beaverhead	5	3-18	61	46	47
Horse Prarie	6	6	73	71	77
Big Hole	7	7	88	84	93
Wise River	2	6	90	89	98
Ruby River	6	5	69	57	77
MADISON	7	6-20	110	63	105
GALLAT IN	4	7-19	95	64	103
CADDAT IN	4	7-19	95	04	103
MISSOURI MAIN STEM	9	9-20	101	82	107
Teton River	3	6	111	160	130
Sun River	7	6-20	172	147	148
Marias River	1	20	160	131	162
Milk River	1	13	110	65	91
UPPER YELLOWSTONE	7	2-17	102	83	104
Shields River	1	16	66	49	95
LOWER YELLOWSTONE, WYOMING					
Shoshone	2	5-11	93	81	93
Wind River	14	4-17	97	95	90
Popo Agie	6	5-17	120	81	112
Owl Creek on the Big Horn River	2	5	155	135	125
Wood River on Greybull River	2	2-5	105	163	105
Tongue River	3	3-4	127	140	142
Clear Creek on the Powder River	1	3	58	53	51
Crazy Woman Creek on the Powder I	Riv 1	1	90		
COLUMBIA	RIVER BAS	IN IN MO	NTANA		
KOOTENAI RIVER, above Libby, Mont	ana 9	3-17	152	144	150
FLATHEAD RIVER	16	3-20	167	135	124
UPPER CLARKFORK	-15	2-20	111	105	127
PEND OREILLE	6	7-29	138	106	135



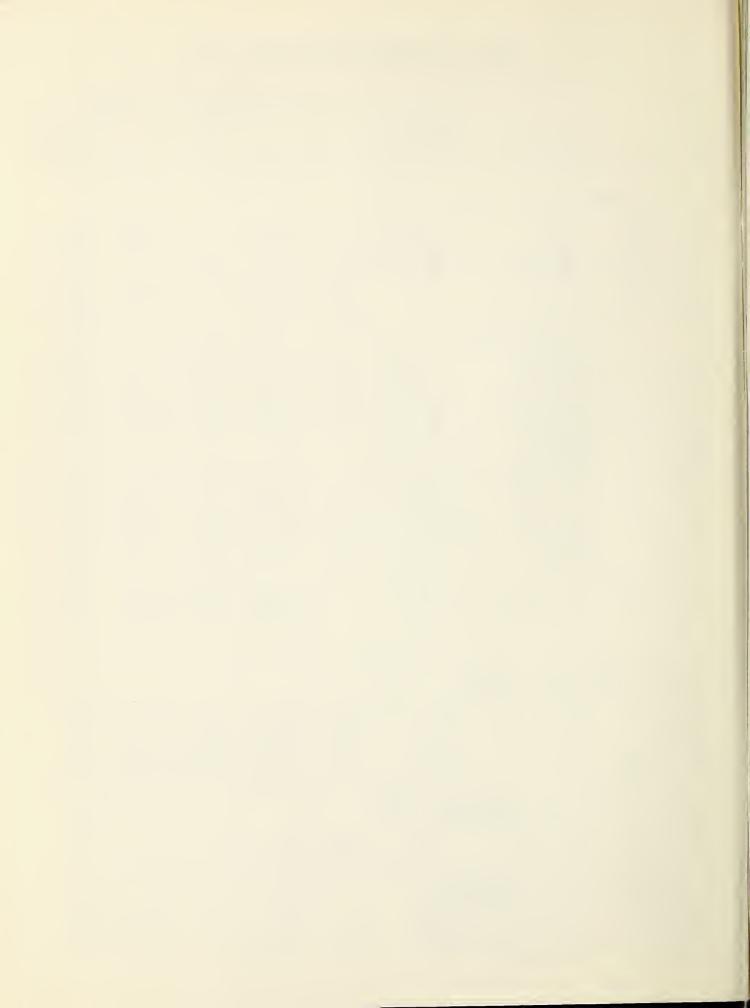
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

IND	LA	10			IAI	M	a m	JKINI	CKIN WIC)I\III	NG	21/	V	v C	\mathcal{O}_{U}	KDLD	
Drainage Baein and Course Name	Montana Number		Sec.	Twp.	Range Long.	Record 8egan		Reasured By:	Drainage Basin and Course Name	Montane Number SSOUR	Elev.	Sec. Lat,	Tro.	Range Long,	Record Began		Heasur By:
(ROCK-BEAV THEAD)														.,		••	
Lakeview Ridge	1153	7400	27	148	2W	1948	3,4,5	9	81G HORN RIVER Wys	oming 9F8	8900	6	43N	102W	1948	2216	12
Lakeview Canyon	11E4 12E2	6930 6950	26 5	14S 15S	2W 9W	1948 1948	3,4,5	9 1	Owl Creek Tensleep R.S.	8F1 753	8700 8300	36 30	43N 49N	101W 86W	1948 1935	2,3,4,5 2,3,4,5 4,5	12 12 1
(HORSE FRAIRIE)	1251	8850	18	145	9W	1948	3,4	1	Timber Creek Ranger Cresk	982 751 9F7	8800 8800 8000	25 32 28	47N 53N	103W 88W	1948 1935	4,5	12
Eloody Dick	13010	7600	12	88	16W	1948	3,4	1	Wood River (SHOSHONE RIVER) W		8000	28	46N	103W	1939	2,3,4,5	12
Gold Stone Jemhi Pase Terrell Creek	1309 1351 13012	8100 7480 6650	11 9 14	8S 10S 9S	16W 15W 15W	1948 1948 1948	3,4 3,4 3,4	1 1	East Entrance	1056	7000	17	52N	109W	1948	1,2,3,4,5	5
Prail Creek Selway Junction	1362	7090 6800	15	108	15W 15W	1948	3,4 3,4	1	Sylvan Pace TONGUE RIVER Wyom	1055	7100	12	52N	170M	1936	1,2,3,4,5	5
(BIG NOLE)									Sig Goose	7E2	7700	4	53N	86W	1945	2,3,4,5	1
Mig Nole Pase	13D3 w)13D4	7440 6900	28 24	3S 3S	18W 18W	1948 1948	3,4 3,4	1	Burgese Ranger Sta. Dome Lake Lodgepole	754 755 951	7900 8800 8200	36 11 32	56N 53N 56N	89W 87W 106W	1950 1950 1940	2,3,4,5	12 12 1
Aet Boundary 1bbons Pass	1305 13D2	6700 7100	22 4	3S 2S	17W 19W	1948 1934	3,4 1,2,3,4,5	1 1,2	POWDER RIVER	/	02.00	,,,	,,,,,	100#	2040	4,7	•
ahnke Creek iner Porks iner Lake	1306 1306 1307	7340 7300 6720	25 24 10	7S 6S 6S	16W 17W 16W	1948 1948 1945	3,4 3,4 3,4,5	1 1	North Powder Fuddy Pass	758 757	8500 9700	11 11	47N 48N	85W 85W	1951 1950	2,3,4,5	12
(WISE RIVER)	1,551	0120	10		10"	174)	2,4,2	•	Soldier Park Sour Dough	756 651	8700 8500	36 17	51N 49N	85W 84W	1950 1936	2,3,4,5	12
nderson Mdw.	13814	7000	18	38	12W	1948	3,4	1	Red Fork	751	7000	18	43N	85W	1936	2,3,4,5	12
lk Horn iee River	13015 13013	6300	15 15	45 25	12W 12W	1934 1948	3,4,5	1									
(RUBY RIVER)																	
ottonwood ottonwood (Upper) isehlight	11E2 11E1 12D3	5900 8400 6950	24 30 22	10S 10S 8S	3W 2W	1948	3,4	1 1			COLUM	ΛRIΔ	ριV	ER B	ASIN		
bacco Root igilante	12D2 11D1	6900 6125	13 28	45 98	7₩ 4₩ 3₩	1945 1948 1948	3,4,5 3,4 3,4	1	KOOTENAI RIVER		JULUN		KI V		10114		
OISON RIVER									Baree Mountain Blue Bird Basin	1581 14A1	6000 6800	1 24	25 N 37N	31W 26W	1937 1937	4,5	1
ebgen est Yellowetone	1185 1187	6550 6700	22 34	11S 13S	3E 5E	1934 1934	1,2,3,4,5	2 2	Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5	i
orris Basin	1022	75 00	446-44	2,00	1100-421	1935	1,2,3,4,5	5,6	PLATHEAU RIVER	13814	5000	11	19N	12W	1061	2215	1
evil'e Slide	1004	81.00	14	58	6E	1935	2.3.1.5	2,6	Basin Creek Big Creek Brush Creek	1383 1444	6750 5000	6&7 13	22N 30N	18W 26W	1951 1941 1937	2,3,4,5 3,4,5 3,4,5	4
ood Meadow ystic Lake	10D3 10D2	6600 6600	22 30	45 35	6E 7E	1934 1935	2,3,4.5	2,6 6,7	Cattle Queen Oesert Mouhtain	13A1 13A2	4700 5600	7 24	35N 31N	17W 19W	1939 1937	3,4,5 1,2,3,4,5	5
ew World L-Mile	1001	6700 7150	24	38 118	6E 55	1939 1934	2,3,4 1,2,3,4,5 1,2,3,4,5	6,7	HellRoaring Divide Holbrook Kishenehn	1443 13813 1442	5770 4530 4300	35 18 7	32N 21N 37N	22W 13W 21W	1942 1951 1946	3,4,5 1,2,3,4,5 4,5	1
ISSOURI RIVER MAIN	STEM								Limeetone Paes Logan Cresk	13B8 14A5	7000 4300	28 34	18N 30N	1.2W 24W	1948 1937	3,4,5	í
heesman Recervoir rystal Lake	1205 901	6200 6100	2 24	8N 12N	5₩ 17E	1936 1941	1,2,3,4,5	2	Marias Pass Snow Lab. #16	13A5 13A9	5250 5200	34 15	30N 29N	14W	1934 1946	1,2,3,4,5	2
rasshopper Inge Nill Lonic Grounds	1002 1001 1206	7000 7950 6500	19 35 22	9N 13N	88 7E	1938	3,4	1 2	Spotted Sear Mt. Strawberry Lake Trinkus Lake	13B2 13A10 13B1	7000 6500 6500	23 11 9	25N 28N 25N	15W 19W 17W	1948 1948 1948	3,4,5 3,4,5 3,4,5	1
ipeetone Paes cemple Pase	1201	7200 6900	11 16	5N 1N 13N	6W 7W 7W	1940 1938 1934	2,3,4 2,3,4,5 3,4,5	3 1 2	Trout Lake #2 Upper Holland Lake	13A12 1385	3600 7000	21 28	28N 20N	17W 16W	1948 1948	3,4,5	1
en Mile Creek, Lowe en Mile Creek, Middl	er1202 la1203	6250 6800	13 13	8N 8N	6W	1935 1934	1,2,3,4,5	2	Twin Creeks Quintonkon	13B11 13A13	35 80 3800	11	26N 26N	16W 17W	1951 1951	2,3,4,5	1
en Mile Creek,Upper ETON RIVER)	r 12C4	8000	19	8N	5W	1935	1,2,3,4,5	2	Coyote Hill El Dorodo Mine Gold Creek Lake	13810 1309 1308	1200 7800 7200	12 23 14	18 N 8 N 8 N	16W 12W 12W	1951 1916 1916	1,2,3,4,5	1 11 11
reight Creek	1241	6000	13	26N	10W	1948	3,4	1	Intergaard Lubrecht Forest	1304 1308	6450 5400	6 31	5N 1LN	13W	1939 1951	2,3,4	3 13
aldron Creek est Form	12B2 12B1	5600 6000	16 6	25 N 25 N	9W	1948 1948	3,4	1	North Fork Jooko Pionio Grounde Pipeetone Pase	13B7 1206 1201	6330 6500 7200	22 11	17N 5N 1N	17# 6# 7#	1941 1940 1938	3,4,5 2,3,4,5 2,3,4,5	1 3 1
sun river)									Rainy Lako Slide Rock Mountain	13B6	1300 7100	11 26	18N 10N	16W	1947	3,4.5	i 1
ench Mark abin Creek -Bull	1286 1286 1289	5500 5400 5600	33	20N 23N	10W 10W 10W	1948	3,4 3,4	1	Southern Cross Stemple Pass Storm Lake No. 2	1305 1301 1307	6500 6900 7780	9 16 19	5N 13N LN	13 M 7 M 13 M	1939 1934 1939	2,3,4 3,4,5 2,3,4	3 2 1
tee Park	1285 1287	5300 7000	36 31 20	20N 24N 22N	10W 10W	1948 1949 1934	3,4 3,4 3,4	1 2	Stuart Mill Stuart Mountain #1	1306	6500 7400	19	5N 1LN	13W 18W	1939 1936	2,3,4	3
y Lake cong Cresk Ridge	13B9 12B3	7300 6800	21 17	23N 25N	12W 10W	1950 1949	3,4	1									
rong Creek ARIAS RIVER)	1284	5700	32	25N	10W	1949	3,4	1	PEND OREILLE RIVER	1701	6000	,	OF W	71.0	1070		,
rias Paes	13A5	5250	34	30N	14W	1936	1,2,3,4,5	2	Saree Mountain Preezeout Submit #2 Noodoo Creek	1381 15810 1501	6000 6800 6200	1 21 9416	25 N 15 N 14 N	31W 27W 27W	1937 1951 1937	4.5 4 4	1
TIK PTUEO)									BITTERROOT RIVER	.,		,	- Nari	-1"	-//	-	
CLK RIVER)	9Al	5200	15	28N	16E	1941	3,4	7	East Fork Runger Stn Gibbons Fees	.1301 1302	5400 7100	16 L	2N 2S	17W 19W	1937 1934	4 1,2,3,4,5	1
USSELSHELL RIVER)									Mud Creek Pesture Nez Perce Camp	1402 1402	1500 5580	2L 19420	11N 15	2以市 23年	1937 1937	34	1
asshopper	1003	7000	19	9N	88	1938	3,4	1	Nezperce Pese Skalkaho Summit	1LD1 1303	6575 7259	32 30	6 B	16E 17#	1937 1937	4	1
PER YELLOWSTONE)																	
amp Senia anyon ooke City	901 10E3 1007	7890 7750 7400	2 44°-44° 25	88	18E 1100-30'	1937 1938	1,2,3,4,5	1 12									
revice Ft.	1007 1005 10D6	8400 8000	29 22	95 99 75	145 95 128	1937 1935 1941	1,2,3,4,5 3,4 3,4	5 1 12									
ake Camp upine Creok	10% 10%	7850 7300	440-341	1	100-241	1937 1938	1,2,3,4,5	12 5		SASKA	TCHEV	VAN	RIV	ER B	ASIN		
SHIFLDS RIVER)									ST. MARY RIVER								
orcupine	1003	6500	10	4N	106	1938	3,4	1	Iosberg Lake Pingan Pane #4	13A3 13A4	5000 LB	30_50, 30_161	1	130-121	1922	5	2,8
WER VEILOWSTONE wind River) Wyomin	ig.								Piegan Pesa ∯o Mount Allan ∯7 Ptarmigan ∰8	13A6 13A7 13A8	7000 48	30-14: 30-14:	1	130-121 130-101 130-121	1922 1922 1922	5 5 5	2,8 2,8 2,8
coke Lake #3	10F2 9P6	92 00 8800	23 15	44N 43N	110W 107W	1939 1948	2,3,4,5	12 12	E mil 20	L) NO	,,,,,, <u>u</u>	50'	1	±7-°UZ'	1400	,	2,6
	9F10 9F9 9F2	10000 9500 8750	9 34 27	39N 4N	105W 6W	1948 1948	2,3,4,5	12 12		1							
ry Creek	9F2 9F3 9G2	8500 10000	27 12 22	42N 41N 23	108W 108W 3W	1940 1948 1948	2,3,4,5 2,3,4,5 2,3,4,5	12 12 12	a. Numerale 1,2,3,b. Numerale rafer								ara Mah.
ry Creek Noir Nyser Creek Obbe Park		9500	24	41N 2S	108W 3W	1948 1940	2,3,4,5	12 12	1. U.	S. Force	t Sarvica						
ry Creek Noir syser Creek bbe Park ttle Warm squito Park R.S.	9F4 9G3	9500			109W	1939	2,3,4,5	12 12	2. tr. 3. vo	S. Ocolog	gioal Surv	rey and	U.S. R	nginser	Corps		
ry Creek aNoir syster Creek abbe Park lttle Warm sequito Park R.S. eridan R.S.	9F4	9500 7500 9000 8000	3 26 1	42N 1N 43N	4W 107W	1940	2,3,4,5	12	in 1	S. India	er Compan Samolee						
ry Creek shoir syser Creek shobe Park tette Warm sequito Park R.S. seridan R.S Lawrence R.SCross Ranch out Creek gwotee Pass	9F4 9G3 9F1 9F11 9F5 9G1 10F1	75 00 9000	26		4W	1940 1940 1948 1936	2,3,4,5 2,3,4,5 2,3,4,5	12 12 10	L. U. 5. Na 6. Mo	S. India: tional Pa ntana Exp	n Sarvie e ark Sarvio periment S						
ry Creek uNkoir eyser Creek obbe Park ittle Warm osquito Park R.S. heridan R.S. t. Lawrence R.SCross Ranch rout Creek ogwotee Pass (Popo Agie River) 1 tue Ridge	9F4 9G3 9F1 9F11 9F5 9G1 10F1 Wyoming 8G2	75 00 9000 8000 8400 9600	26 1 5 29	1N 43N 2S 44N 31N	107W 2W 110W	1940 1948 1936	2,3,4,5 2,3,4,5 2,3,4,5 2,3,4,5	12 10	L. U. 5. Na 6. Mo 7. C1 8. Do	S. Indian tional Particular ntana Exp ty of Som minion We	n Sarvice ark Sarvic periment S censon ater and F	a Station Power Bu					
immodie ry Creek UNOir ry Creek UNOir seysor Creek bbb Park tttle Warm sequito Park R.S. heridan R.S. t. Lawrence R.SCross Ranch rout Creek gwotee Pass (Popo Agle River) i tue Ridge rannier Meadews streen Creek swedll Clade suth Fees	9F4 9G3 9F1 9F11 9F5 9G1 10F1 Wyoming	7500 9000 8000 8400 9600	26 1 5 29	1N 43N 2S 44N 31N 30N 30N	4W 107W 2W 110W	1940 1948 1936	2,3,4,5 2,3,4,5 2,3,4,5	12 10	L. U. 5. Na 6. Mo 7. C1 8. Do 9. U. 10. U.	S. Indian tional Partiana Exp ty of Somminion We S. Fish a S. Euraan	n Sarvie e ark Sarvie periment S cemen	station Power Builder Services	vio e				

STATUS OF RESERVOIR STORAGE MARCH 1, 1954

			THO	THOUSAND ACRE FEET IN STORAGE					
BASIN		USEABLE			MARCH 1				
&:		CAPACITY					10-yr avg		
ST REAM	RESERVOIR	(M.A.F.)	1954	1953	1952	1951	1942-51		
MISSOURI RIVER	BASIN					:			
D	T	04.00	10.0	70.0	35.6	37.9	39.4		
Beaverhead Ruby River	Lima Ruby	84.00 38.85	18.8	30,9	55.0	31.9	35.4		
Madison Riv	Hebgen Lk	345.00	155.1	179.3	264.4	230.8	237.6		
Madison Riv	Ennis Lk	41.00	38.5	34.4	35.1	35.2	35.1		
Hyalite Crk	Middle Crk		2.3				New		
Missouri Riv	Canyon Ferry	401.70	421.0	18.4	18.9	19.3	30.4		
Missouri Riv	Hauser Lk						-		
	(Inc. Lk Hele	na) 62.50	62.5	57.3	46.3	57.2	50.7		
Missouri Riv	Lk Helena	10.45	10.4	8.6	5.1	8.6	12.9XX		
Missouri Riv	Holter Lk	81.92	74.9	58.7	49.8	65.1	56.1		
N.Fk.Sun Riv	Gibson	105.00	76.7	53.4	66.4	81.5	64.5		
N.Fk.Sun Riv	Willow Crk	32.30	26.4	20.1	24.0	23.8	14.5		
N.Fk.Sun Riv	Pishkun	32.00	20.6	17.7	23.3	18.9	18.5		
Teton Riv	Bynum	70.00	20.6		23.1	28.1	23.5		
Birch Crk	Swift Lk Francis	30.00	22.6		20.1	20.1	20.0		
Dupuyer & Birch Crk	LK Francis	112.00	92.2	95.5	93.6	93.5	82.0		
Judith Riv	Ackley Lk	5.82	2.4	2.5	3.8	4.9	4.4		
Missouri Riv				17	11,690.	I .	1		
Milk Riv	Fresno	127.20	79.0	76.8	90.3	65.9	51.3		
Milk Riv	Nelson	66.80	28.8	30.3	38.5	15.7	28.2		
W.Rosebud Crk	Mystic Lk	20.80	10.1	6.8	8.2	8.7	9.3		
Red Lodge Crk	Cooney	27.50			8.6	8.4	9.6		
Tongue Riv	Tongue Riv	73.90		14.5	18.3	8.4	9.9		
Swiftcurrent C	rk Sherburne L	k 66.10		17.2	18.4	27.9	23.8		
xx 8 year aver	a ge								
MISSOURI RIVER	BASIN * WYOMI	NG							
Shoshone Riv	Buffalo Bill	440.00	153.2	151.2	237.0	295.6	297.4		
Wind Riv	Boysen	758.00	361.9	540.8	122.0	290.0	2010-1		
Wind Riv	Pilot Butte	31.6	12.0	12.4	9.3	8.4	12.7		
Bull Creek	Bull Lk	152.00	76.8	60.8	66.6	89.5	62.3		
Belle Fourche	Key Hole	190.00	8.7	8.3					
MISSOURI RIVER	BASIN - NORTH	DAKOTA							
Hamb Diagram	Unich District	E4 00	E 4 4						
Hart River Hart River	Hart Butte Dickerson	54.80 4.3	54.4						
mai o Rivei	DICKETSOIL	7.0	0.0						
MISSOURI RIVER	BASIN - SOUTH	DAKOTA							
Belle Fourche	Belle Fourche	185.00	109.1	52.0	88.0	81.0	116.0		
Cheyenne River	Angostura	160.00	31.0	109.0	112.0	28.0			
Cheyenne River		15.1	15.4	13.5					
Grand River	Shadehill	84.00	82.3	78.0					
				H	1	· ·	1		

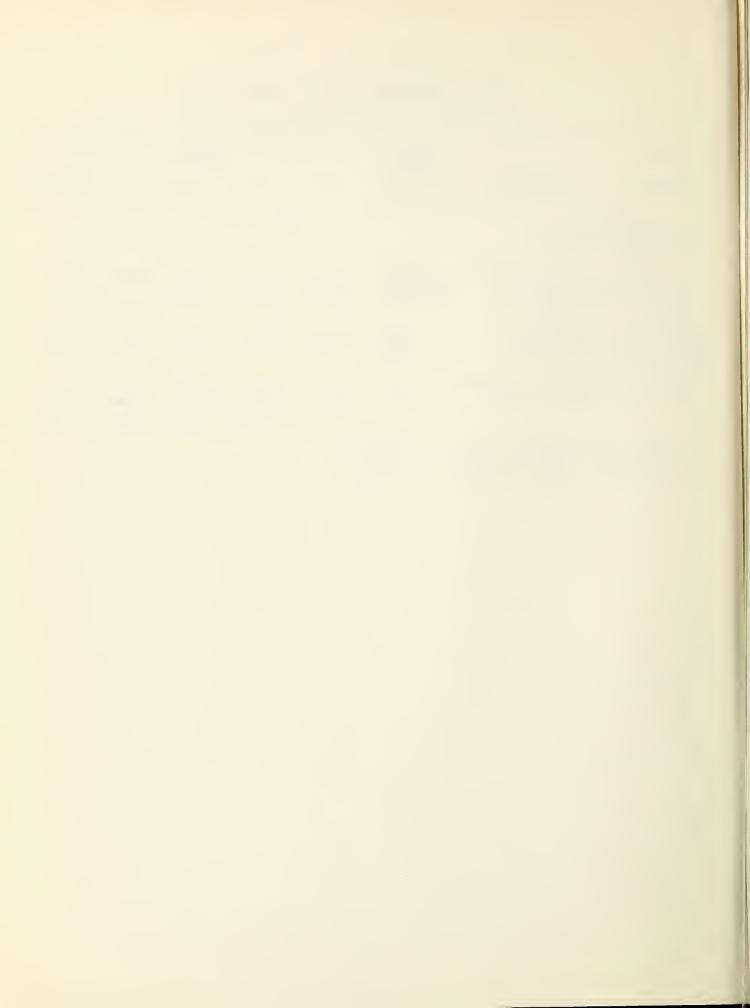


STATUS OF RESERVOIR STORAGE MARCH 1, 1954

BASIN		USEABLE	THO	USAND ACR	E FEET I	N STORA	GE ABOUT
&c	SSERVOIR	CAPACITY (M.A.F.)	1954	1953	1952	1951	10-yr avg 1942-51
COLUMBIA RIVER F	BASIN						
Flint Crk G	eorgetown Lk	31.00	21.1	22.9	23.4	23.0	23.7
S.Fk.Flathead Hu	mgry Horse	3,500.00	2,021.0	706.5	65.8		
	lathead Lk	1,791.00	836.5	828.1	730.1	902.7	720.4
*Bitterroot Bi	itterroot	36.10	28.4	29.4	36.1	34.8	15.0
*Dry Fork Crk Dr	ry Fork	6.70	2.4	4.1	4.1	4.4	2.2
*Flathead	•						
Irrigation Pr. M	Mission Valley	98.60	19.0	33.6	34.6	49.8	37.0
Jocko Crk Lv		7.6	Snow Bound	Snow Bound	Snow Bound	Snow Bound	Snow Bound

Sum of two reservoirs on Little Bitterroot

^{*} Sum of two reservoirs on Dry Fork Creek
** Sum of (8) eight reservoirs on Project



	SNOW COVER MEASUREMENTS								
MISSOURI BASIN				1954			st Rec		у
DRAINAGE BASIN			Date	Snow	Water				Years
AND			of	Depth	Content	Water	Conte	nt (In.)	of *
SNOW COURSE	No.	Elev.	Survey	(In.)	(In.)	1953	1952	Average	
JEFFERSON RIVER									
(Rock-Beaverhead)			- /0				3.77.4		0
Lakeview Ridge	11E3	7400	3/2	40	7.9	9.9	13.4	9.2	6
Lakeview Canyon	11E4	6930	3/2	38	10.2	11.2	14.6	11.3	6
Limekiln	12E2	6950	2/11	00	0.0	10.0	10.0	1.6	6
White Pine Rdg	12E1	8850	2/11	16	2.7	5.8	6.6	5.2	6
*Kilgore			0/00		0.5		300	0.5	3.0
*Camp Creek	12E3	6800	2/28	32	8.7	11.5	18.9	8.7	18
*Blue Ldg Mine	11211	6700							
(Horse Prarie)			- 4-						
Bloody Dick	13D10		2/15	33	8.8	12.0	11.0	10.9	6
Gold Stone	13D9	8100	2/15	40	11.8	15.4	13.0	13.6	6
Lemhi Pass	13E1	7400	2/10	18	4.7	6.1	11.0	8.2	6
Terrell Creek	13 D 12		2/12	13	3.6	5.6	4.6	4.5	6
Trail Creek	13 E 2	7090	2/10	20	4.8	6.4	8.1	7.0	6
Selway Junction	13 D 11	6500	2/12	23	6.0	8.4	8.2	7.4	6
(Big Hole)									
Big Hole Pass	13 D 3	7440	2/16	44	14.1	14.6	17.6	16.0	6
Big Hole (Below)	13D4	6900	2/16	40	12.3	12.9	13.6	13.6	6
East Boundary	13 D 5	6700	2/16	24	6.2	7.3	7.9	7.6	6
Gibbons Pass	13 D 2	7100	2/25	64	21.4	24.4	25,6	19.3	20
Jahnke Creek	13 D 8	7340	2/15	35	8.8	11.4	10.4	10.3	6
Miner Forks	13 D 6	7300	2/14	38	10.2	12.3	10.8	10.8	6
Miner Lake	13 D 7	6720	2/14	32	6.9	6.9	7.6	7.4	9
*Moose Creek	13 D 16	6200	3/1	51	15.6	19.0		14.2	14
(Wise River)									
Anderson Meadow	13 D 14	7000	2/18	31	7.6	8.4	8.3	7.8	6
Elk Horn	13 D 15								
Wise River	13D13		2/18	23	5.1	5.7	6.0	5.2	6
(Ruby River)			., _,						
Cottonwood	11F2	5900	2/10	26	7.2	8.2	11.4	8.0	6
Cottonwood (Up)	1161	8400	2/10	26	7.4	9.1	13.0	8.7	6
Flashlight	12 D 3	6950	3/2	17	3.7	6.4	4.4	4.1	9
Tobacco Root	1202	6900	2/9	21	5.1	10.6	11.2	9.0	6
Vigilante	1101	6125	2/10	5	1.1	1.5	3.3	1.3	6
			2/10			1.00	0.0	1.0	-
MADISON RIVER									
Hebgen	11E5	6550	3/1	36	10.1	9.3	18.5	11.0	20
W. Yellowstone	11E7	6700	3/1	36	10.4	10.0	16.5	10.3	20
21-Mile	11 E 6	7150	3/1	56	16.4	14.7	25.3	14.2	20
*Big Springs	11E9	6500	2/26	62	20.8	18.9	31.0	18.5	18
*Island Park	11210	3600	2/27	51	15.5	15.1	26.4	14.7	18
*Valley View	11E8	65 00	2/27	45	12.4	12.9	23.8	13.6	9
Norris Basin	10E2	7500	3/1	34	9.8	6.3	9.3	8.1	13
			1			,	1	1	1

^{*}Adjacent Basin

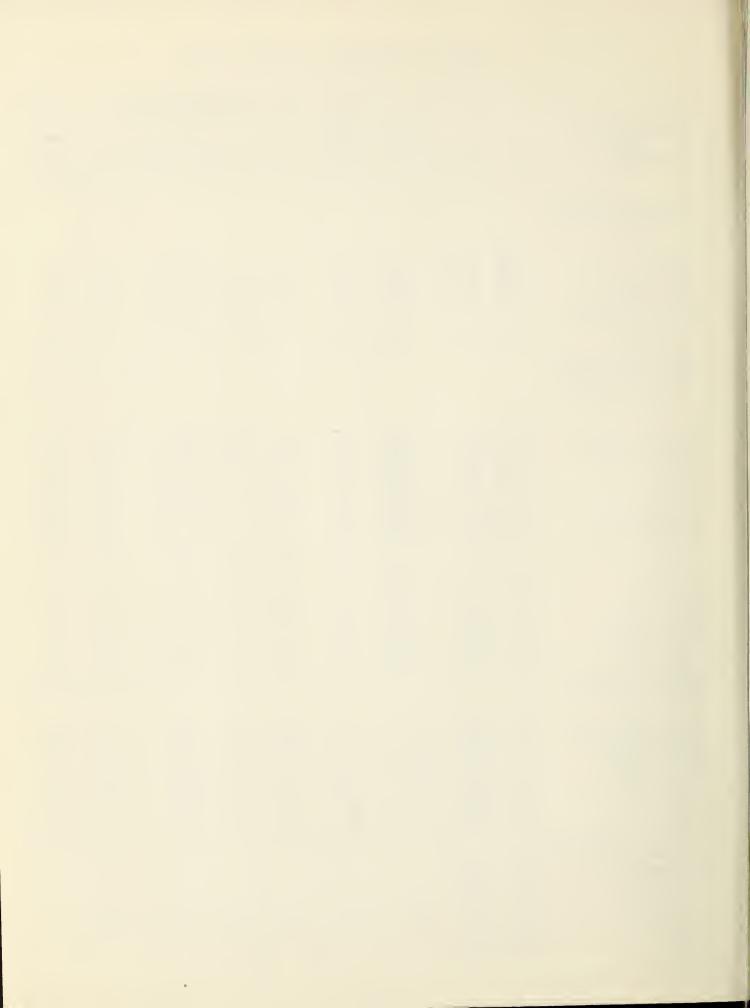


A				SNOW COVER MEASUREMENTS							
MISSOURI BASIN				1954			st Rec				
DRAINAGE BASIN			Date	Snow	Water		-	, wie to to the	Years		
AND			of	Depth		Water	Conter	t (In.)	of		
SNOW COURSE	No.	Elev.	Survey	(In.)	(In.)	1953	1952	Average			
				(/	(=== ,						
			:								
GALLATIN RIVER											
GALLATIN RIVER											
Devil's Slide	10 D 4	8100	2/27	48	13.7	15.6	20.5	15.3	19		
Hood Meadow	1003	6600	2/25	20	5.6	6.4	10.3	6.6	19		
New World	1001	6700	3/3	26	6.8	7.8	10.4	8.6	12		
21-Mile	1126	7150	3/1	56	16.4	14.7	25.3	14.2	20		
			0/1		1001	1101	20.0	11.2	20		
MISSOURI RIVER											
MAIN STEM						-					
Chessman Res.	12 C 5	6200	3/1	15	3.4	4.2	5.7	4.4	18		
Crystal Lake	901	6100	2/27	44	9.4	8.8	14.4	10.3	13		
Kings Hill	1001	7950	3/2	44	11.9	9.7	14.1	10.4	20		
Picnic Grounds	13C6	6500	3/1	20	4.2	6.0	6.2	4.4	9		
Pipestone Pass	12D1	7200	$3/\bar{1}$	17	4.4	4.9	4.9	4.2	16		
Stemple Pass	1201	6900	3/2	45	12.1	8.9	12.0	8.3	20		
Tenmile, Lower	1202	6250	3/3	26	6.4	6.4	7.2	5.7	19		
Tenmile, Middle	1203	6800	3/4	35	8.8	9.5	10.1	8.3	20		
Tenmile, Upper	1203	8000	3/4	39	10.9	12.1	12.9	10.7	19		
(Teton River)	1201	0000	J/ T	09	10.5	12.1	12.9	10.1	19		
Fright Creek	12A1	6000	2/27	64	21.2	19.7	14.0	16.4	6		
Waldron Creek	12B2	5600	2/26	34	9.5	7.2	5.9	7.1	6		
West Fork	12B1	6000	2/26	62	20.0	18.8	11.4	15.5	6		
(Sun River)	TUDI	0000	2/20	02	20.0	10.0	1104	19.9	0		
Benchmark	12B8	5500	2/25	42	15.0	7.0	10.1	8.9	6		
Cabin Creek	12B6	5400	2/26	33	9.0	6.1	6.8	6.8	5		
5-Bull	12B9	5600	2/25	38	12.6	5.1	6.5	7.0	6		
Gates Park	12B5	5300	2/27	50	14.7	8.1	10.5	10.1	5		
Goat Mountain	12B7	7000	3/3	57	16.3	9.5	11.2		20		
Wrong Ridge	12B3	6800	3/1	82	27.2		19.3	8.7	5		
Wrong Creek	12B4	5700	2/28	62	20.4	12.6	14.3	15.1	T T		
(Marias River)	IODI	3700	2/20	02	2007	12.0	14.0	19.1	5		
Marias Pass	13A5	5250	3/3	75	24.3	15.2	18.6	15.0	20		
(Milk River)	IONO	3230	3/3	10	24.0	10.2	10.0	10.0	20		
Rocky Boy	9A1	5200	3/3	17	4.3	7 0	0.6	4 77	17		
ROCKY BOY	SAI	5200	3/3	11	4.0	3.9	6.6	4.7	13		
UPPER YELLOWSTONE											
Canyon	10 E 3	7750	3/1	47	15.1	13.9	16.3	13.6	8		
Cooke City	10D7	7400	2/28	33	9.8	8.5	9.3	6.8	17		
Crevice Mt.	10D5	8400	2/28	32	7.4	7.9	11.7	8.3	15		
Lake Camp	10E4	7850	3/1	38	9.5	8.8	12.8	9.1	17		
-		. 500	-/-	- J J			1 -200		- '		

^{*}Adjacent Basin

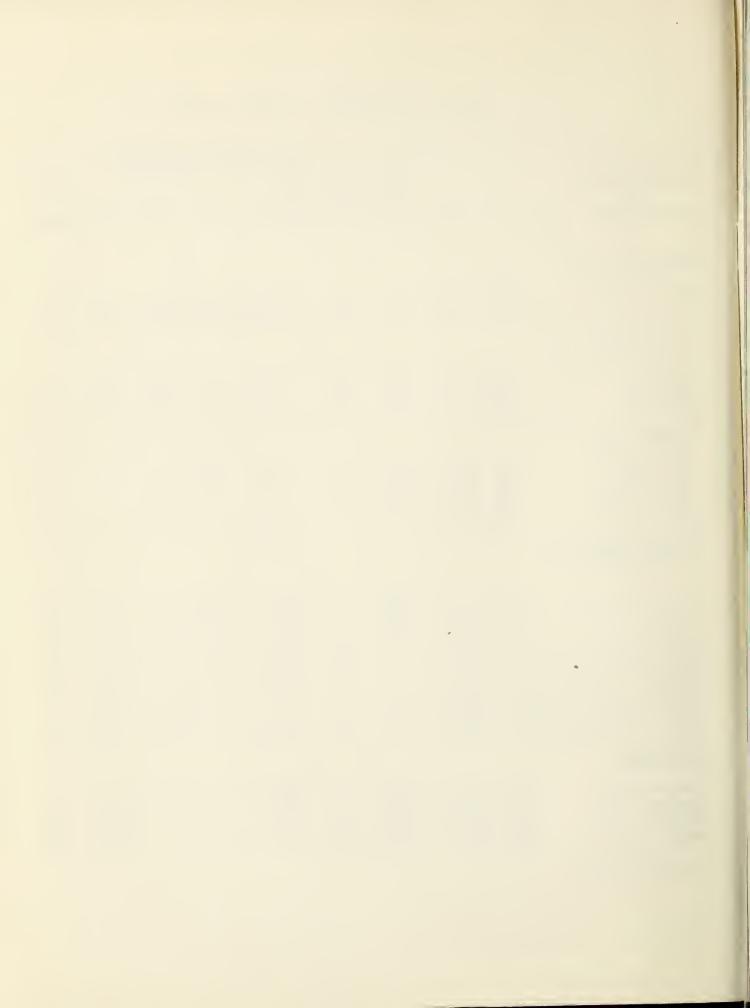


MISSOURI BASIN DRAINA (S BASIN AND SNOW COURSE No. Elev. Survey Cln. Cln. Lupine Lupine Louine	*			1						
DRAIN OF BASIN AND SHOW COURSE No. Elev. Show Show Course No. Elev. Show Show Course No. Elev. Show Show Course No. Elev. Elev						SNOW CO				
No. Elev. Survey Content Water Content Cin. Of 1952 Average Record				Data		Motor	Pa.	st Reco	ora	Years
UPFER YELLOWSTONE							Water	Conter	t (In.)	
UPFER YELLOWSTONE Cont*4 Cont*4 Cont*4 Lunine		No.	Elev.		. ^ .1					
Cont'd							ļ			
Cont'd										
Lupine 10El 7300 3/1 38 10.4 8.7 13.7 8.5 15 *Lewis Lake Div. 10E9 7000 2/26 116 41.2 39.8 45.8 35.4 35 *Astor Creek 10ER 7700 2/26 90 31.0 30.7 34.5 25.3 35 *Tom Thumb Summit 10E7 7900 2/26 73 22.5 N.R. 25.5 23.2 2 (Shields River) Porcupine 10C3 9200 2/27 20 5.1 7.8 10.4 5.4 16 LOWER YELLOWSTONE (Wind River - Ab. Div. Dam) Brooks Lake #3 10F2 9200 2/24 65 22.0 22.4 25.1 20.7 17 Burroughs Creek 9F6 8800 2/25 42 13.2 15.2 10.5 15.6 5 Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 Geyser Creek 9F3 8500 2/25 24 6.9 7.2 6.8 8.8 5 Little Narm 9F4 9500 2/25 50 14.9 14.8 15.0 18.3 5 Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togowtee Pass 9F1 9600 2/27 84 26.3 2.4 25.9 27.8 4 Dinwoodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/28 30 7.7 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.4 13 *Dinwoodie 9F10 10000 2/28 37 7.2 7.5 4.9 6.6 5 *Mosquito Fark 962 10000 2/28 37 7.7 7.0 7.9 7.3 10 *St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 *Trout Creek 964 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Lersen Creek 964 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Lersen Creek 964 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Lersen Creek 964 9000 3/1 53 13.5 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 12.3 23.1 11.5 13 *Mulligan Park 965 8900 3/1 55 14.6 5.4 5.4 5.5 4.9 5 *Mod River 987 8000 3/1 24 5.4 5.4 5.4 5.5 4.9 5 *Mod River 987 8000 3/1 24 5										
Lewis Lake Div. 1089 7000 2/26 116 41.2 39.8 45.8 35.4 35 **Astor Creek 1088 7700 2/26 73 22.5 N.R. 25.5 23.2 2 **Shields River) 1007 7900 2/26 73 22.5 N.R. 25.5 23.2 2 **Shields River) 1003 9200 2/27 20 5.1 7.8 10.4 5.4 16 **Lower Yellowstone (Wind River - Ab. Div. Dam) 1003 9200 2/27 20 5.1 7.8 10.4 5.4 16 **Lower Yellowstone (Wind River - Ab. Div. Dam) 1003 9200 2/24 26 22.0 22.4 25.1 20.7 17 **Burroughs Creek 9F6 8800 2/25 42 13.2 15.2 10.5 15.6 5 **Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 **Geyser Creek 9F3 8500 2/25 24 6.9 7.2 6.8 8.8 5 **Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 **T-Cross Ranch 9F5 8000 2/25 50 14.9 14.8 15.0 18.3 5 **Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 **Dinwoodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 **Dry Creek 9F9 9500 2/28 30 7.7 7.0 7.9 7.3 5 **Hobbs Park 9G2 10000 2/28 30 7.7 7.0 7.9 7.3 10 **St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 **Trout Creek 9G4 9000 2/28 21 4.5 6.8 6.6 6.0 5 **POPO AGIE RIVER** **Blue Ridge 8G2 9500 3/1 55 13.5 11.1 16.6 11.5 17 **Larsen Creek 9G4 9000 3/1 55 13.5 11.1 16.6 11.5 17 **Larsen Creek 9G4 9000 3/1 55 14.6 12.3 23.1 11.5 13 **Mulligan Park 9G5 8900 3/1 38 7.2 6.5 8.0 6.2 14 **South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 **Mulligan Park 9G5 8900 3/1 55 14.6 12.3 23.1 11.5 13 **Mulligan Park 9G5 8900 3/2 15 3.1 4.5 2.5 4.9 5 **Dutch Joe 9G6 8700 2/24 23 5.6 6.4 9.4 7.9 2 **EIG HORN RIVER (Wyo.)** **Beavers Mill 9F8 8000 3/1 24 5.4 5.4 5.6 5.0 6.2 4 5.4 5.4 5.9 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	(Cont'd)									
Lewis Lake Div. 1089 7000 2/26 116 41.2 39.8 45.8 35.4 35 **Astor Creek 1088 7700 2/26 73 22.5 N.R. 25.5 23.2 2 **Shields River) 1007 7900 2/26 73 22.5 N.R. 25.5 23.2 2 **Shields River) 1003 9200 2/27 20 5.1 7.8 10.4 5.4 16 **Lower Yellowstone (Wind River - Ab. Div. Dam) 1003 9200 2/27 20 5.1 7.8 10.4 5.4 16 **Lower Yellowstone (Wind River - Ab. Div. Dam) 1003 9200 2/24 26 22.0 22.4 25.1 20.7 17 **Burroughs Creek 9F6 8800 2/25 42 13.2 15.2 10.5 15.6 5 **Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 **Geyser Creek 9F3 8500 2/25 24 6.9 7.2 6.8 8.8 5 **Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 **T-Cross Ranch 9F5 8000 2/25 50 14.9 14.8 15.0 18.3 5 **Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 **Dinwoodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 **Dry Creek 9F9 9500 2/28 30 7.7 7.0 7.9 7.3 5 **Hobbs Park 9G2 10000 2/28 30 7.7 7.0 7.9 7.3 10 **St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 **Trout Creek 9G4 9000 2/28 21 4.5 6.8 6.6 6.0 5 **POPO AGIE RIVER** **Blue Ridge 8G2 9500 3/1 55 13.5 11.1 16.6 11.5 17 **Larsen Creek 9G4 9000 3/1 55 13.5 11.1 16.6 11.5 17 **Larsen Creek 9G4 9000 3/1 55 14.6 12.3 23.1 11.5 13 **Mulligan Park 9G5 8900 3/1 38 7.2 6.5 8.0 6.2 14 **South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 **Mulligan Park 9G5 8900 3/1 55 14.6 12.3 23.1 11.5 13 **Mulligan Park 9G5 8900 3/2 15 3.1 4.5 2.5 4.9 5 **Dutch Joe 9G6 8700 2/24 23 5.6 6.4 9.4 7.9 2 **EIG HORN RIVER (Wyo.)** **Beavers Mill 9F8 8000 3/1 24 5.4 5.4 5.6 5.0 6.2 4 5.4 5.4 5.9 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Lunine	1081	73 00	3/1	38	10.4	8.7	13.7	8.5	15
*Astor Creek				2/26		41 •2		1	35.4	35
Shields River Porcupine 1003 9200 2/27 20 5.1 7.8 10.4 5.4 16				2/26			1		1	
Description 1003 9200 2/27 20 5.1 7.8 10.4 5.4 16		10 E 7	7900	2/26	73	22.5	N.R.	25.5	23.2	2
LOWER YELLOWSTONE (Wind River - Ab. Div. Dam)		1007	0200	2/27	20	5.1	7 9	10.4	5.4	16
Brooks Lake #3	Toroupine	1003	3200	2/21	20	0.1	7.0	10.1	0.1	10
Brooks Lake #3										
Brooks Lake #3 10F2 9200 2/24 65 22.0 22.4 25.1 20.7 17 Burroughs Creek 9F6 8800 2/25 42 13.2 15.2 10.5 15.6 5 Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 Geyser Creek 9F3 8500 2/25 24 6.9 7.2 6.8 8.8 5 Little Tarm 9F4 9500 2/25 50 14.9 14.8 15.0 18.3 5 Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwoodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/28 54 17.0 13.9 19.7 18.6 5 Dry Creek 9F9 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER Blue Ridgs 82 9500 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 863 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Perk 9G5 8900 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 0 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800										
Burroughs Creek 9F6 8800 2/25 42 13.2 15.2 10.5 15.6 5 Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 Geyser Creek 9F3 8500 2/25 24 6.9 7.2 6.8 8.8 5 Little Warm 9F4 9500 2/25 50 14.9 14.8 15.0 18.3 5 Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwoodie 9F10 10000 2/27 84 26.3 24.4 25.9 27.8 4 Dinwoodie 9F10 0000 2/23 37 9.5 11.8 12.2 13.3 5 Bry Creek 9F9 9500 2/28 30 7.7 7.0 7.9 7.3 5 Hobbs Park 9G2 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 9G3 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER Blue Ridge 8G2 9500 3/1 54 13.0 10.2 14.5 9.9 14 Grannier Meadows 8G4 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Perk 9G5 8900 2/24 23 5.6 6.4 9.4 7.9 2 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 *BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/1 24 5.4 3.6 2.7 3.2 2 *Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800	Div. Dam)									
Burroughs Creek 9F6 8800 2/25 42 13.2 15.2 10.5 15.6 5 Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 Geyser Creek 9F3 8500 2/25 24 6.9 7.2 6.8 8.8 5 Little Warm 9F4 9500 2/25 50 14.9 14.8 15.0 18.3 5 Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwoodie 9F10 10000 2/27 84 26.3 24.4 25.9 27.8 4 Dinwoodie 9F10 0000 2/23 37 9.5 11.8 12.2 13.3 5 Bry Creek 9F9 9500 2/28 30 7.7 7.0 7.9 7.3 5 Hobbs Park 9G2 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 9G3 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER Blue Ridge 8G2 9500 3/1 54 13.0 10.2 14.5 9.9 14 Grannier Meadows 8G4 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Perk 9G5 8900 2/24 23 5.6 6.4 9.4 7.9 2 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 *BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/1 24 5.4 3.6 2.7 3.2 2 *Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800	Brooks Take #3	10F2	9200	2/24	65	22.0	22 4	25.1	20.7	17
Du Noir 9F2 8750 2/24 26 7.2 7.4 6.6 9.1 13 Geyser Creek 9F3 8500 2/25 50 14.9 7.2 6.8 8.8 5 Little Tarm 9F4 9500 2/25 50 14.9 14.8 15.0 18.3 5 Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwcodie 9F10 10000 2/27 84 26.3 24.4 25.9 27.8 4 Dinwcodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/28 20 4.5 6.9 5.9 7.3 5 Hobbs Park 9G2 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 9G3 9500 2/28 30 7.7 7.0 7.9 7.3 10 \$	The state of the s						18			
Ceyser Creek	_			2/24				1		1
Sheridan 9F1 7500 2/24 27 7.6 8.2 7.3 6.6 17 T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwoodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/23 20 4.5 6.9 5.9 7.3 5 Hobbs Park 962 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 963 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER				2/25						
T-Cross Ranch 9F5 8000 2/26 32 7.2 7.5 4.9 6.4 13 *Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwcodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/23 20 4.5 6.9 5.9 7.3 5 Hobbs Park 9G2 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 9G3 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER Blue Ridge 8G2 9500 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 30 7.0 9.8 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800							1	1		1
#Togwotee Pass 9F1 9600 2/27 84 26.3 24.4 25.9 27.8 4 Dinwcodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/23 20 4.5 6.9 5.9 7.3 5 Hobbs Park 9G2 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 9G3 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER Blue Ridge 8G2 9500 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 30 7.0 9.6 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/1 24 5.4 3.6 2.7 3.2 2 **Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800							l.		1	
Dinwcodie 9F10 10000 2/23 37 9.5 11.8 12.2 13.3 5 Dry Creek 9F9 9500 2/23 20 4.5 6.9 5.9 7.3 5 Hobbs Park 9@2 10000 2/28 54 17.0 13.9 19.7 18.6 5 Mosquito Park 9G3 9500 2/28 30 7.7 7.0 7.9 7.3 10 St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.8 6.6 6.0 5 POPO AGIE RIVER Blue Ridge 8G2 9500 3/1 54 13.0 10.2 14.5 9.9 14 Grannier Meadows 8G4 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 30 7.0 9.6 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Oul Creek 8F1 8700 Timber Creek 9E2 9000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800				2/27	1		1	(1	1
Dry Creek 9F9 9500 2/23 20	105		2000	2/2/	01	2000	5101	2000	1 2	-
Hobbs Park 962 10000 2/28 54 17.0 13.9 19.7 18.6 5							1	į.	1	
Mosquito Park 963 9500 2/28 30 7.7 7.0 7.9 7.3 10								1	1	
St. Lawrence 9F11 9000 2/27 23 5.5 6.0 8.1 6.2 10 Trout Creek 9G1 8400 2/28 21 4.5 6.0 8.1 6.2 10 POPO AGIE RIVER Blue Ridge 8G2 9500 3/1 54 13.0 10.2 14.5 9.9 14 Grannier Meadows 8G4 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 3/0 7.0 9.8 9.2 9.9 12 *Dutch Joe							1	1	1	
POPO AGIE RIVER 862 9500 3/1 54 13.0 10.2 14.5 9.9 14 Grannier Meadows 8G4 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8G1 8500 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 2/24 23 5.6 6.4 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/1 24 5.4 3.6 2.7 3.2 2 Ranger Creek 7E1 8800	•					1	1			
Blue Ridge							3	1		
Blue Ridge 862 9500 3/1 54 13.0 10.2 14.5 9.9 14 Grannier Meadows 864 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 964 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 861 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 863 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 965 8900 30 7.0 9.8 9.2 9.9 12 *Dutch Joe 966 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800	PARA AGTA DITTER			,						
Grannier Meadows 8 G4 9000 3/1 53 13.5 11.1 16.6 11.5 17 *Larsen Creek 9 G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8 G1 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8 G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9 G5 8 900 30 7.0 9.8 9.2 9.9 12 *Dutch Joe 9 C6 8 700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9 F8 8000 Owl Creek 8 F1 8 700 Timber Creek 9 E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9 E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7 E3 8 200 Ranger Creek 7 E1 8 800	POPO AGIE RIVER									
*Larsen Creek 9 G4 9000 2/24 18 4.2 4.0 9.5 11.9 5 Sawmill Glade 8 Gl 8 500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8 G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9 G5 8 900 2/24 23 5.6 6.4 9.2 9.9 12 *Dutch Joe 9 C6 8 700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9 F8 8 000 Owl Creek 8 F1 8 700 Timber Creek 9 E2 9 000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9 E7 8 000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7 E3 8 200 Ranger Creek 7 E1 8 8 00	Blue Ridge	8 G 2	95 00	3/1	54	13.0	10.2	14.5	9.9	14
Sawmill Glade 8Gl 8500 3/1 38 7.2 6.5 8.0 6.2 14 South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 30 7.0 9.8 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 3/2 15 3.1 4.5 2.5 4.9 5 Wood Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 7E1 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800 8800				3/1						
South Pass 8G3 9000 3/1 55 14.6 12.3 23.1 11.5 13 Mulligan Park 9G5 8900 30 7.0 9.6 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 7E1 8800 7E1 8800 800<									1	1
Mulligan Park 9G5 8900 2/24 23 7.0 9.8 9.2 9.9 12 *Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800				3/1			l f	1		
*Dutch Joe 9C6 8700 2/24 23 5.6 6.4 9.4 7.9 2 BIG HORN RIVER (Wyo.) Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800				3/1				1		
Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 7E1 8800 7E1 8800	-			2/24			11	1		
Beavers Mill 9F8 8000 Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 7E1 8800 7E1 8800	Dra 710511 - /111	`								
Owl Creek 8F1 8700 Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 8200 7E1 8800	The state of the s	·								
Timber Creek 9E2 9000 3/2 15 3.1 4.5 2.5 4.9 5 Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800										
Wood River 9E7 8000 3/1 24 5.4 3.6 2.7 3.2 2 Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800 7E1 88				7/0	15	7 7	4.5	2 -	4.0	
Tensleep R. S. 7E3 8200 Ranger Creek 7E1 8800				3/1						
Ranger Creek 7El 8800				0/1	S.T	0.1	0.0	201	1 0.2	2
*Adjacent Basin	-									
	*Adjacent Basin									



WIAGONDI DI COM					SNOW CO	OVER MEASUREMENTS				
MISSOURI BASIN			- D	1954	1 787 1	Pa	st. Reco	rd	1 · v.	
DRAINAGE BASIN			Date	Snow	Water	TAT -	0	1. 17 >	Years	
AND CNOW GOLDON	NT -	D3	of		Content			t (In.)	of	
SNOW COURSE	No.	Elev.	Survey	(In.)	(In.)	1953	1952	Average	Record	
SHOSHONE RIVER										
East Entrance	10 E 6	7 000	3/1	36	10.8	10.9	13.0	10.7	5	
Sylvan Pass	10E5	7100	3/1	46	11.5	13.1	14.5	13.3	11	
TONGUE RIVER										
Burgess Jct.	7 B 4	7 900	3/3	50	16.2	11.8	10.3	11.1	3	
Big Goose	7E2	7700	3/4	15	3.8	4.2	4.6	3.7	3	
Dome Lake	7 E 5	9000	3/4	3 2	8.8	6.6	5.6	5.5	4	
POWDER RIVER										
Sour Dough	6 E 1	8500	3/5	24	5.4	6.0		6.0	1	
North Powder	7E8	8500								
Soldier Park	7 E 6	8700	3/5	15	1.9	3.3	3.6	3.7	3	
Muddy Pass	7E7	9700								
KOOTENAI RIVER ABOVE Libby, Mont.	S									
Brush Creek, Mont.	14A4	5000	2/26	58	18.8	10.8	11.9	12.7	7	
Fernie, B.C.	10	3500	3/1	50	15.2	8.0	9.5	7.7	15	
Fernie, New, B. C.	10A	4100	3/1	7 0	21.3	13.8	13.9	14.0	3	
Kimberley, B. C.	20B	3800	2/28	46	12.2	7.7	9.0	6.6	13	
Marble Canyon, B. C.		5000	3/1	62	16.5	14.7	13.6	14.7	7	
Red Mountain, Mont.	15A1	6000	3/1	75	24.4	17.6	16.7	15.8	17	
Sinclair Pass, B. C.		4500	3/2	34	8.9	4.5	5.6	5.3	8	
Sullivan Mine, B. C.		5100	3/1	54	17.4	13.2	16.1	13.2	8	
Upper Elk River, B.(41	4400	3/1	47	12.9	6.8	6.5	8.2	6	
BITTERROOT										
Gibbons Pass	13 D 2	7100	2/25	64	21.4	24.4	25.6	19.3	20	
Nezperce Pass	14 D 1	6575	2/24	48	14.0			15.1	15	
Nezperce Camp	14 D 2	5580	2/25	42	11.5			11.2	14	
Moose Creek	13D16	6200	3/1	51	15.6	19.0		14.2	14	

^{*}Adjacent Basin



		SNOW COVER MEASUREMENTS							
COLUMBIA BASIN				1954	SNOW CC		t Rec		·
DRAINAGE BASIN			Date		787- 1	1 2.5	s c nec	1	Years
			1	Snow	Water	Tillo L o m	Canta	L (Tm)	of
AND	37	73.7	of	Depth		Water		nt (In.)	
SNOW COURSE	No.	Elev.	Survey	(In.)	(In.)	1953	1952	Average	Record
								1	
FLATHEAD RIVER									
Dina Dina	3443	6800							
Blue Bird	14A1		7/0	4.5	17.1	- 0	30.5	0.7	7
Basin Creek	13B14	5000	3/2	45	13.1	5.9	10.7	8.7	3
Big Creek	13B3	6750	3/5	94	35.5	35.8	40.4	35.4	13
Brush Creek	14A4	5000	2/26	58	18.8		11.9	12.7	7
Cattle Queen	13A1	4700	2/28	116	38.4	1	32.4	30.1	9
Desert Mountain	13,42	5600	2/25	51	16.6		16.1	12.8	10
Goat Mountain	12B7	7000	3/3	57	16.3		11.2	8.7	20
Hell Roaring Div.	14A3	5700	2/24	88	31.4	26.2	28.6	29.4	4
Holbrook	14B13	4530	3/2	45	12.3	7.1	11.1	9.1	3
Kishenehn	14A2	4300	2/26	41	11.5	7.6	7.6	8.1	8
Logan Creek	14A5	4300	2/23	38	10.6	6.4	8.1	8.4	7
Marias Pass	13A5	5250	3/3	75	24.3	15.2	18.6	15.0	20
N. Fork Jocko	13B7	6330	3/3	111	42.2		37.4	36.0	13
Quintonkon	13A13	3800	3/2	49	15.6	10.8	17.8	13.8	3
Coyote Hill	13B11		3/1	42	13.2	11.4	13.7	10.0	7
Spotted Bear Mt.	13B2	7000	3/1	48	15.9	11.1	15.6	16.1	6
Strawberry Lake	13B10	6500	3/2	96	33.2	11.01	10.0	38.6	3
Trinkus Lake	13B10	6500	3/2						
				114	42.6	37.0		36.2	4
Trout Lake	13A12	3600	2/28	57	18.5		17.3	17.9	5
Twin Creeks	13B11	3580	2/28	42	14.8	9.0	12.7	10.8	3
Upper Holland	1 3 B 5	7000	3/2	103	36.9			31.8	4
PEND ORIELLE									
Hoodoo Creek	1301	6200	3/1	166	63.3			43.1	7
Hoodoo creek	1001	0200	3/1	100	00.0			45.1	3
UPPER CLARK FORK									
Coyote Hill	13B11	4200	3/1	42	13.2	11.4	13.7	10.0	7
Chessman Res.	1205	6200	3/1	15.	3.4	4.2		10.0	7
	1203 1304	6450		27			5.7	4.4	18
Intergaard			3/1		6.7	7.6	8.4	6.1	18
North Fork Jocko	13B7	6330	3/3	111	42.2	1	37.4	36.0	13
Picnic Grounds	13C6	6500	3/1	20	4.2	6.0	6.2	4.4	9
Pipestone Pass	12D1	7200	3/1	17	4.4	4.9	4.9	4.2	16
Southern Cross	13 C5	6500	3/1	22	6.0	5.6	9.1	4.6	18
Stemple Pass	1301	6900	3/2	45	12.1	8.9	12.0	8.3	20
Storm Lake #2	1207	7780	3/1	41	10.5	12.8			1
Stuart Mill	13 C 6	6500	3/1	20	5.5	6.4	7.4	5.1	18
Tenmile, Lower	1202	6250	3/3	26	6.4	6.4	7.2	5.7	19
Tenmile, Middle	12C3	6800	3/4	35	8.8	9.5	10.1	8.3	20
Tenmile, Upper	1204	8000	3/4	39	10.9	12.1	12.9	10.7	19
*49 Meadows	15B10	5000	3/1	117	44.2			30.0	14
*Lookout	15B2	5250	3/1	125	45.8	29.8	37.0	29.8	29
Fish Lake			3/1	121	39.8	35.7	37.3	36.5	2
			1		1	11		1 3000	1 ~



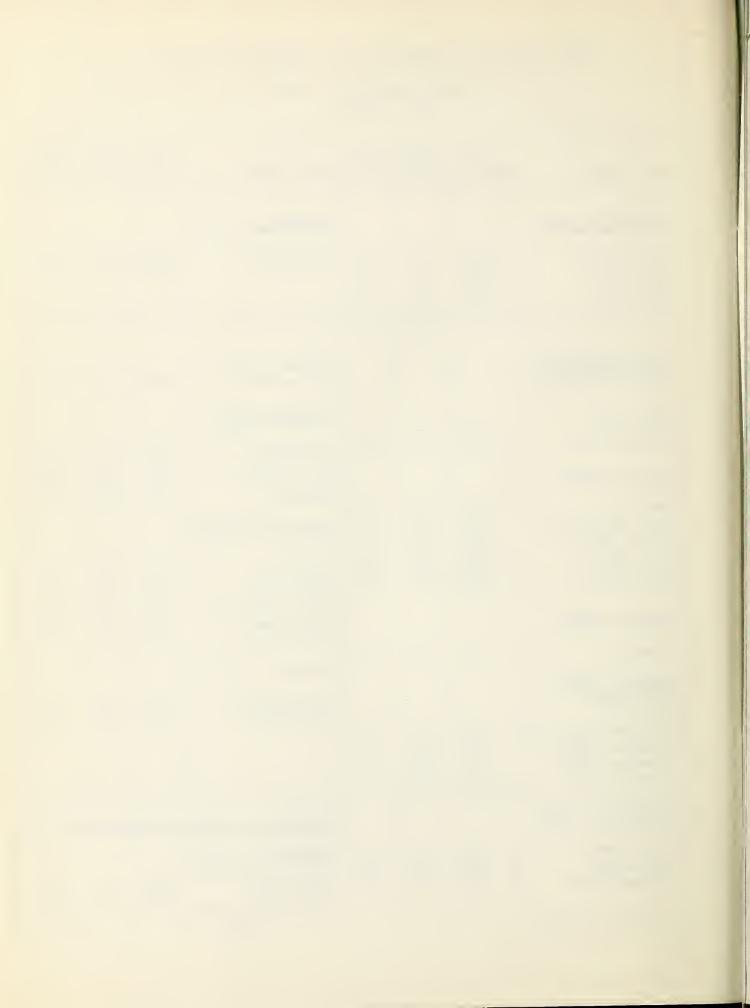
SNOW SURVEY DATA COLLECTED BY SOIL CONSERVATION SERVICE

PRIOR TO FEBRUARY 1, 1954 Season 1953-54

SNOW COURSE	Date Measured	Snow Depth	Water Cont.			Snow Depth	Water Cont.
Gibbons Pass Coyote Hill Marias Pass Holbrook	12/1 12/2 12/4 12/8	21 8 13 9	4.4 1.2 2.0 2.0	DECEMBER 15, 1953 Marias Pass Coyote Hill	12/21 12/16	28 13	6.2 3.3

JANUARY 1, 1954

JEFFERSON RIVER (Rock-Beaverhead)				(Marias River) Marias Pass	1/5	49	10.8
*Camp Creek (Big Hole) Gibbons Pass MADISON RIVER Hebgen West Yellowstone Norris Basin *Big Springs *Island Park *Valley View GALLATIN RIVER 21-Mile MISSOURI RIVER MAIN STEM Chessman Reservoir Tenmile, Lower Tenmile, Middle Tenmile, Upper	1/1 12/31 1/5 1/4 1/5 12/28 12/29 12/29 1/4 1/4 1/4 1/3 1/3	15 41 22 19 21 32 26 17 33	2.7 10.8 5.3 3.7 3.3 6.1 4.5 2.4 6.5	COLUMBIA BASIN Coyote Hill Desert Mt. Lookout Pass Holbrook UPPER YELLOWSTONE Canyon Cooke City Lake Camp *Lewis Creek Div. *Astor Creek *Tom Thumb Summit (Shoshone River) East Entrance Sylvan Pass	1/4 1/2 1/4 1/2 1/1 1/3 1/1 1/1 1/1 1/1 1/3	18 27 84 19 20 18 16 53 45 31	5.2 5.7 18.8 2.5 4.8 3.3 3.2 14.9 9.3 6.3
JANUARY 15, 1954 Marias Pass Coyote Hill Lookout Pass * Adjacent Basin	1/16 1/16 1/15	62 32 93	12.9 6.3 24.4	FEBRUARY 1, 1954 (S FEBRUARY 15, 1954 Marias Pass Coyote Hill Gibbons(Lost Trail Pass)	2/16 2/17 2/17	74 37 100	Bulletin 22.5 11.1 35.0



NOTICE

The attached two sheets of snow survey data are revised summary data for the snow courses at Coyote Hill and Cattle Queen, Montana.

COYOTE HILL

The snow course at Rainy Lake had become infested with beavers and when the nearby stream would start to rise, water would flood the snow survey course. It was deemed advisable to move the course to higher ground and at the same time maintain a duplicate record for comparative purposes. The new location was selected at Coyote Hill which is close to the highway and well above the beaver-infested area. During 1952 and 1953, the courses in Coyote Hill and Rainy Lake were measured concurrently ten or twelve times during each season. These readings gave us a sufficient array of data to produce a conversion formula. With this formula, the data for 1947 through 1951 at Rainy Lake was moved to Coyote Hill and is shown on the new Summary Sheet No. 7.

CATTLE QUEEN

During the summer of 1953, the snow survey course at Cattle Queen was remarked and the number of measurements reduced from twenty to ten. The ten sampling points selected are the ten best sampling points of the old snow survey course. The snow survey course was not moved. The number of measurements were changed from twenty to ten. The summary tabulation shown on page six of our 1922-52 summary should be replaced by the attached sheet for Cattle Queen. These data are recomputations for the ten sampling points selected. If you are interested in keeping abreast of the corrections and additions to the summary, these two sheets could be pasted on Pages 6 and 7, respectively, in our 1922-52 Snow Survey Summary for Montana.

A. R. CODD

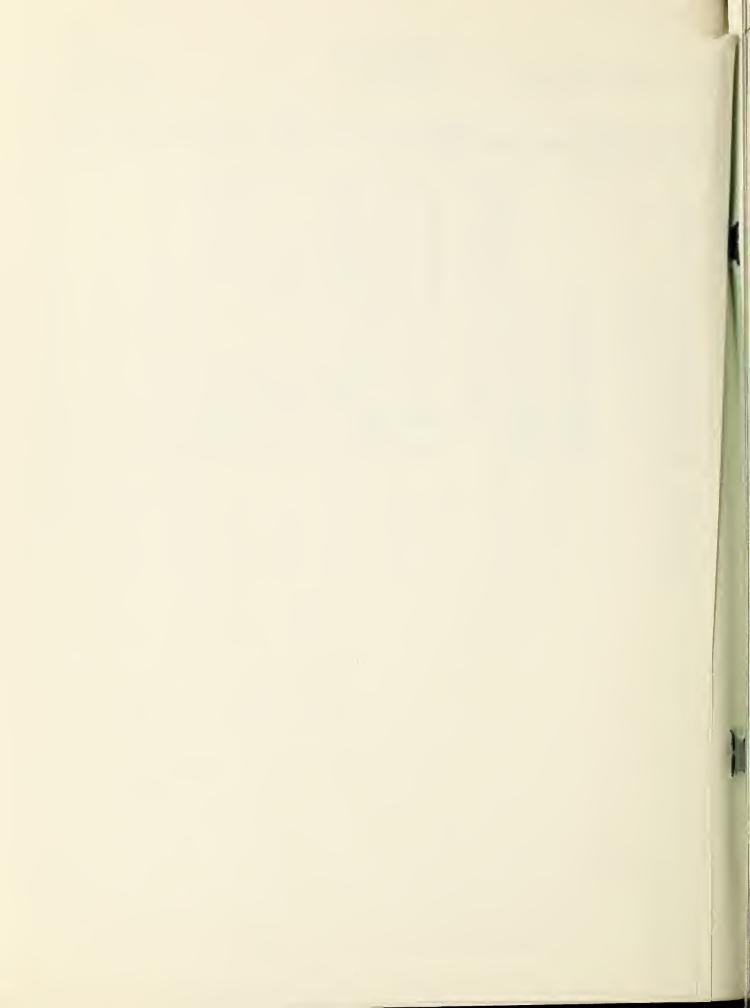
Snow Survey Leader for Montana



Sec. 7: T35N: R17W Lat. 48-482: Long. 113-50 CATTLE QUEEN Montana

No. 13-A-1 Elev. 4700

Month		March		April				May				
Year	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water
		In.	In.		In.	In.		In.	In.		In.	In.
1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1950 1951 1952 1953 Total Avg. 1954 1955 1956 1957 1958 1959 1960		70 103 94 91 86 105 91 92 94 826 92	17.8 35.0 33.9 24.4 30.9 34.8 31.8 32.4 29.5 270.5 30.1	3/29 4/1 3/31 4/7 4/2	81 55 46 62 88 65 75 92 93 95 82 120 99 94 90 1237 82	31.9 19.1 18.2 20.6 31.0 19.9 26.4 39.5 38.4 31.0 35.0 45.2 38.0 32.5 33.2 459.9 30.7	# # # # # # # # # # # # # # # # # # #	54 37 6 36 45 25 Measure 11 11 11 11 11 11 11 11 11 11 11 11 11	25.6 15.0 3.0 13.2 21.0 10.0 3d		4110	

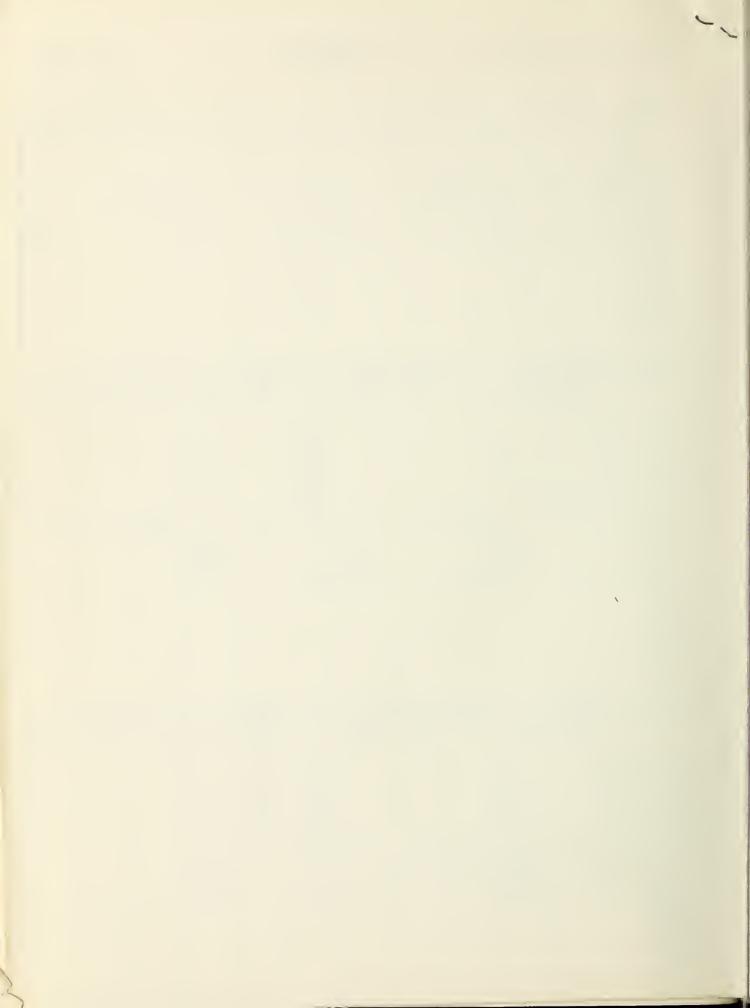


No. 13-B-11 Elev. 4200

				+								
Month	December 1			December 15			January 1			January 15		
Year	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water
		In.	In.		In.	In.		In.	In.		In.	In.
1952	12/1	8	1.4	12/15	19	3.1	1/2	33	8.0	1/15	32	9.2
1953	12/3	5	0.5	12/15	17	3.0	12/31	18	3.4	1/15	18	4.6
1954	12/2	8	1.2	12/15	13	3.3	1/4	18	5.2	1/15	32	6.3
Total			3.1			9.4			16.6			20.1
Avg.	(3)		1.0	(3)		3.1	(3)		5.5	(3)		6.7
1955												
1956												
1957												
1958												
1959												
1960												

Month	February 1			February 15			March 1			March 15		
Year	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water
		In.	In.		In.	In.		In.	In.		In.	In.
1947 1948 1949 1950 1951 1952 1953 1954 Total Avg. 1955 1956 1957 1958 1959 1960	2/1 2/2 2/1	easure 35 29 24	5.5 6.0 8.2 10.0 d 10.4 8.2 10.1 58.4 8.3	2/15 2/15 2/17 (3)	35 31 37	11.1 31.5	2/28 2/27 2/27 2/27 2/26 2/28 3/2 3/1 (8)	43 39 42	8.8 7.8 12.6 12.0 3.6 13.7 11.4 13.2 83.1 10.4	3/15 Not M	39 easure	14.5 1

Month	April 1			April 15			May 1			May 15		
Year	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water	Date	Snow	Water
		In.	In.		In.	In.		In.	In.		In.	In.
1947	3/31		8.8				5/3	0	0			
1948	3/29		9.6			ļ	5/1	0	0			
1949	3/29	Ì	12.8				5/1	Trace	0			
1950	3/30		16.8				5/2	15	8.9			
1951	4/1		4.3				4/30	0	0			
1952	4/1	38	14.9	4/14	23	12.0	5/1	0	0			
1953	3/30	30	11.4	Not me			5/1	8	3.7			
Total			78.6				-/-		12.6			
Avg.	(7)		11.2				(7)		1.8			
1954												
1955												
1956												
1957												
1958												
1959									1	1		







Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"